HORTICULTURE SERIES NO. 489

USER'S GUIDE FOR THE CONTAINER NURSERY COST ESTIMATION PROGRAM

DEPARTMENT OF HORTICULTURE
THE OHIO STATE UNIVERSITY

OSU The Ohio State University

This is an instructional guide and worksheet for the use of The Ohio State University, Container Nursery Cost Computer Program. The program is stored on the AMDAHL 470 V/6-II and IBM/620 computing systems at The Ohio State University. It can be accessed with any remote terminal with an acoustical coupler upon establishment of a computer account through the Department of Horticulture, 2001 Fyffe Court, Columbus, OH 43210.

The Nursery Cost Program has been developed to assist nursery operators in estimating production costs, making decisions concerning product profitability and comparing costs against other businesses of similar size in the nursery industry. The program has been authored by the Ohio State University Staff:

Jerry Robertson
Associate Professor

David Perry
Graduate Research Associate

Aaron Supowit
Applications Programmer

Use of the program requires a computer account which can be acquired by sending a check for $25 made out to The Ohio State University to:

Laura Chatfield
The Ohio State University
Department of Horticulture
2001 Fyffe Court
Columbus, OH 43210

After the initial deposit, all users will be billed for computer time. It requires 10 days to establish an account and then you will be sent a User I.D. number, Password, Terminal I.D. number, and University I.D. number. They should be recorded here:

USER I.D. ___ ___ ___ ___ ___ ___

PASSWORD ___ ___ ___ ___ ___ ___

TERMINAL I.D. ___ ___ ___ ___

UNIVERSITY I.D. ___ ___ ___ ___ ___ ___ ___ ___

Any remote computer terminal with an acoustical coupler can be used to access the nursery program. The program can be utilized from 9 AM to 5:30 AM Monday - Friday, 11 AM to 7 PM Saturday, and 9 AM to 11 PM Sunday, Eastern Standard Time. If you have questions call Laura Chatfield, 614-422-8200, between 8 AM - 5 PM, Monday - Friday.

INTRODUCTION

The program has 4 major sections and is interactive, meaning that the computer will prompt the user for information. Figure 1 illustrates the 4 computer steps:

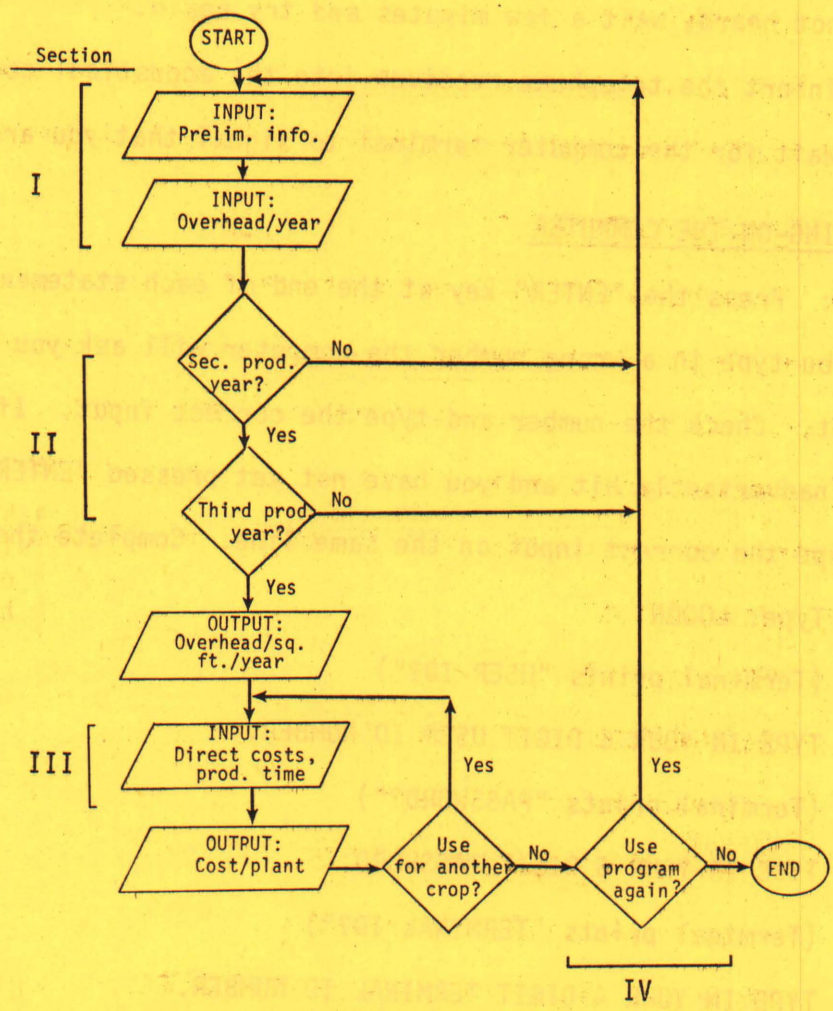

Figure 1—Flow chart representation of containerized nursery product production cost computer program.

Before accessing the computer, Worksheets A and B should be completed. Worksheet A deals with general information and overhead expenses. Worksheet B deals with the cost of each crop and container size. A separate Worksheet B should be completed for all crops that are going to be analyzed on the same computer run.

SETTING UP THE TERMINAL

1. Gain access to the computer by dialing by phone, 614-422-3950. Wait for an answer and listen for the high-pitched tone. If the tone is not heard, wait a few minutes and try again.
2. Insert the telephone receiver into the acoustical coupler.
3. Wait for the computer terminal to signal that you are ON LINE.

LOGGING-ON THE COMPUTER

Note: Press the "ENTER" key at the end of each statement that you type. If you type in a wrong number the computer will ask you to reenter your input. Check the number and type the correct input. If the wrong key is inadvertently hit and you have not yet pressed "ENTER", backspace and retype the correct input on the same line. Complete the following steps:

1. Type: LOGON
2. (Terminal prints "USER ID?")
   TYPE IN YOUR 6 DIGIT USER ID NUMBER.
3. (Terminal prints "PASSWORD?")
   TYPE IN YOUR 6 DIGIT PASSWORD.
4. (Terminal prints "TERMINAL ID?")
   TYPE IN YOUR 4 DIGIT TERMINAL ID NUMBER.
5. (Terminal prints "UNIVERSITY ID?")
   TYPE IN YOUR 8 DIGIT UNIVERSITY ID NUMBER.
6. (Terminal prints "READY")

EXECUTING THE PROGRAM

Type: EX (COST)

Note: Be sure to leave a space between EX and (COST). The program will now automatically start with Section I.

Section I. (Use Worksheet A) In Section I and II, decimal points are not required. Commas and dollar signs should not be used. In Sections I and II, round cost estimates to the nearest dollar.

1. READ IN NUMBER OF YEARS OF PRODUCTION TIME FOR WHICH YOU WILL ENTER DATA. A MAXIMUM OF 3 YEARS MAY BE SPECIFIED. Answer only "1", "2", or "3". The number of years for which data will be entered should be the number of calendar years of production time that the container plant was in production (A maximum of 3 years).
2. READ IN YEAR - This was the first year that the plant was in production. (example - 1980)
3. READ IN SQUARE FEET IN PRODUCTION - The total square footage devoted to containerized nursery crop production. (example - 50000)
4. READ IN PERCENT SPACE UTILIZATION - The percent of total square feet in production (#3) that is actually utilized, i.e. excluding areas such as walkways. (example - 95)

The following questions establish overhead expenses for the first year:

5. READ IN COST OF INSURANCE
6. READ IN COST OF MACHINERY REPAIRS
7. READ IN COST OF BUILDING REPAIRS
8. READ IN COST OF UTILITIES
9. READ IN COST OF TAXES
10. READ IN COST OF OFFICE SALARIES
11. READ IN COST OF ADMINISTRATIVE AND OFFICE SUPPLIES
12. READ IN COST OF ADMINISTRATION AND MANAGEMENT
13. READ IN COST OF BUILDING AND GREENHOUSE DEPRECIATION
14. READ IN COST OF EQUIPMENT AND MACHINERY DEPRECIATION
15. READ IN TOTAL EQUITY INVESTMENT - The total capital invested in the

greenhouse and inventory and equipment used to produce the plant.

16. READ IN THE DESIRED RATE OF RETURN ON INVESTMENT - The desired rate of return on the owner's investment. (example - 20)

Section II. If more than one year of data was specified in the preliminary information section, the program will request overhead costs for the additional year or years. Rather than having to re-enter all the overhead costs, the program will ask if the second year's overhead costs are the same as the first year's. If the costs are the same, no further overhead input is necessary because the program reuses the first years overhead cost/sq. ft. If costs are not the same, the program recycles to the preliminary information section and new data must be supplied for the second production year. A similar procedure is followed if a 3 year production time has been specified.

1. IS THE OVERHEAD FOR YEAR 2 THE SAME AS YEAR 1? Answer "YES" or "NO".
2. IS THE OVERHEAD FOR YEAR 3 THE SAME AS YEAR 2? Answer "YES" or "NO".

After reading the overhead information, the computer program will output overhead cost/sq. ft./production year. If overhead costs are the same for all production years, only one table representing all years will be printed. If overhead costs are different, a table for each production year will be printed. The following is a sample output:

Sample User's Overhead Cost/Sq. Ft. and Comparison to Industry Average, 1978.

	Production Cost	Industry Av.
	Dollars	Dollars
Insurance	$0.015	$0.013
Machinery Repairs	0.010	0.003
Building Repairs	0.004	0.003
Utilities	0.042	0.042
Taxes	0.002	0.002
Office Salaries	0.102	
Administrative and Office Supplies	0.002	
Administration and Management	0.286	0.480
Building and Greenhouse Depreciation	0.041	0.006
Equipment and Machinery Depreciation	0.071	0.096
Return on Investment	0.158	0.047
Total Overhead Cost per Square Foot	0.734	0.693
Total Adjusted Overhead Cost per Square Foot	$0.798	$0.770

Section III. (Use Worksheet B) This section of the program requests direct cost and other information for specific crops. Worksheet B must be completed for each crop and container size. Crops for which the computer is programmed are grouped according to similar handling practices. Plants not specifically named, but handled in a manner similar to one of the groups can be input by using the "Other" category for each group. Use the crop code on the worksheet. Follow the spacing exactly.

1. PRINT INITIALS OF GENUS AND SPECIES
2. READ IN COST OF LINER (use decimal point, example - .35)
3. READ IN GALLON CONTAINER SIZE ("1", "2", and "3")
4. READ IN CONTAINER MATERIAL USED (spell out, "PLASTIC" or "METAL")
5. READ IN TYPE OF CONTAINER LABOR USED (spell out, "MANUAL or "MECHANIZED")
6. READ IN TYPE OF CONTAINER SOIL MIX (spell out "COMMERCIAL" or "COMPOSTED")
7. READ IN THE LABOR AND MATERIAL COST OF CANNING (use decimal point, example - .20)
8. READ IN THE CODE FOR YOUR OVERWINTERING METHOD ("1", "2", or "3")
   1 = Single poly
   2 = Double poly
   3 = Double poly and heat
9. READ IN MONTHS TO GROW IN YEAR - 1 year is entered as "12", 6 months is entered as "6".
10. READ IN SPACE (in^2) REQUIRED IN YEAR - 1 square foot is entered as "144" square feet (decimal point is optional)
11. READ IN OVERWINTERING COSTS FOR YEAR - Unit overwintering cost, (example - .05)
12. READ IN PERCENT SHRINKAGE - (example 10)

After this information has been read in, total unit cost for the specified crop is output. The following is a sample output:

Sample Output of Total Unit Production Cost (Plant Name—Berberis thunbergi).

	Production Cost Dollars	Industry Av. Dollars
Direct Cost per Plant:		
Liner	$0.399	$0.360
Canning, 1 Gal. Container	0.280	0.228
Indirect Cost per Plant for the Year 1978:		
Overwintering	0.050	0.030
Overhead (Space Adjusted)	0.554	0.347
Other Costs (Estimated):		
Fertilizing	0.032	0.020
Weeding	0.030	0.019
Shifting	0.000	0.000
Pruning	0.032	0.020
Spacing	0.021	0.013
Total	$1.398	$1.037
Shrinkage Cost	0.154	0.104
Total Cost per Plant Adjusted for Shrinkage	$1.552	$1.141

Section IV. The program will then ask if another crop is to be analyzed, if "YES", the program recycles to Section III so that a new crop and direct costs can be input. All overhead costs remain as previously input. If the user does not want to use the program for another crop, the user has the option of using the whole program again (recycle to Section I) or ending the computer session. If the program is to be reused, the program recycles to the beginning and requests new data throughout the program. If the program is not to be used again, type "NO" and the session will be terminated, after signing-off.

SIGNING-OFF

To sign-off the computer, type: LOGOFF

The computer will print some accounting information and you will no longer be in contact with the computer.

WORKSHEET A

This worksheet should be filled out completly before accessing the computer program. A column should be filled out for each year that data is desired. For example, if the user wants data for the years 1979 and 1980 he should fill out columns 1 and 2, leaving column 3 blank. If a line does not apply, write in "0". If the user is not sure of exact figures for a line, he should estimate values. Values should be rounded to the nearest dollar.

1. NUMBER OF PRODUCTION YEARS FOR WHICH YOU WANT DATA (Answer "1", "2", or "3") _____

	YEAR 1	YEAR 2	YEAR 3
2. WRITE IN YEARS FOR WHICH YOU WANT DATA	_____	_____	_____
3. SQUARE FEET IN PRODUCTION	_____	_____	_____
4. PERCENT SPACE UTILIZATION	_____	_____	_____
5. OVERHEAD COST OF INSURANCE	_____	_____	_____
6. OVERHEAD COST OF MACHINERY REPAIRS	_____	_____	_____
7. OVERHEAD COST OF BUILDING REPAIRS	_____	_____	_____
8. OVERHEAD COST OF UTILITIES	_____	_____	_____
9. OVERHEAD COST OF TAXES	_____	_____	_____
10. OVERHEAD COST OF OFFICE SALARIES	_____	_____	_____
11. OVERHEAD COST OF ADMINISTRATIVE AND OFFICE SUPPLIES	_____	_____	_____
12. OVERHEAD COST OF ADMINISTRATION AND MANAGEMENT	_____	_____	_____
13. OVERHEAD COST OF BUILDING AND GREENHOUSE DEPRECIATION	_____	_____	_____
14. OVERHEAD COST OF EQUIPMENT AND MACHINERY DEPRECIATION	_____	_____	_____
15. TOTAL EQUITY INVESTMENT	_____	_____	_____
16. DESIRED RATE OF RETURN ON INVESTMENT	_____	_____	_____

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	YEAR 1	YEAR 2	YEAR 3
2. WRITE IN YEARS FOR WHICH YOU WANT DATA	_____	_____	_____
3. SQUARE FEET IN PRODUCTION	_____	_____	_____
4. PERCENT SPACE UTILIZATION	_____	_____	_____
5. OVERHEAD COST OF INSURANCE	_____	_____	_____
6. OVERHEAD COST OF MACHINERY REPAIRS	_____	_____	_____
7. OVERHEAD COST OF BUILDING REPAIRS	_____	_____	_____
8. OVERHEAD COST OF UTILITIES	_____	_____	_____
9. OVERHEAD COST OF TAXES	_____	_____	_____
10. OVERHEAD COST OF OFFICE SALARIES	_____	_____	_____
11. OVERHEAD COST OF ADMINISTRATIVE AND OFFICE SUPPLIES	_____	_____	_____
12. OVERHEAD COST OF ADMINISTRATION AND MANAGEMENT	_____	_____	_____
13. OVERHEAD COST OF BUILDING AND GREENHOUSE DEPRECIATION	_____	_____	_____
14. OVERHEAD COST OF EQUIPMENT AND MACHINERY DEPRECIATION	_____	_____	_____
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4. PERCENT SPACE UTILIZATION	_____	_____	_____
5. OVERHEAD COST OF INSURANCE	_____	_____	_____
6. OVERHEAD COST OF MACHINERY REPAIRS	_____	_____	_____
7. OVERHEAD COST OF BUILDING REPAIRS	_____	_____	_____
8. OVERHEAD COST OF UTILITIES	_____	_____	_____
9. OVERHEAD COST OF TAXES	_____	_____	_____
10. OVERHEAD COST OF OFFICE SALARIES	_____	_____	_____
11. OVERHEAD COST OF ADMINISTRATIVE AND OFFICE SUPPLIES	_____	_____	_____
12. OVERHEAD COST OF ADMINISTRATION AND MANAGEMENT	_____	_____	_____
13. OVERHEAD COST OF BUILDING AND GREENHOUSE DEPRECIATION	_____	_____	_____
14. OVERHEAD COST OF EQUIPMENT AND MACHINERY DEPRECIATION	_____	_____	_____
15. TOTAL EQUITY INVESTMENT	_____	_____	_____
16. DESIRED RATE OF RETURN ON INVESTMENT	_____	_____	_____

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WORKSHEET B

This worksheet should be filled out completly before accessing the computer program. A separate worksheet must be completed for each crop and container size. Crop codes are listed below:

Plant Genus, Species, and Input Code by Cultural Group.

	Code
GROUP I	
Berberis thunbergi	B T
Chaenomeles japonica	C J
Cotoneaster apiculata	C A
Cotoneaster horizontalis	C H
Euonymus alatus	E A
Ligustrum vulgare	L V
Viburnum (species)	V
Weigela hybrida	W H
Other	O G 1
GROUP II	
Buxus microphylla koreana	B K
Euonymus fortunei	E F
Mahonia aquifolium	M A
Pyracantha coccinea	P C
Cotoneaster dammeri	C D
Other	O G 2
GROUP III	
Chameacyparis (species)	C
Pinus (species)	P
Thuja (species)	T
Other	O G 3
GROUP IV	
Rhododendron (species including Azalea)	R
Pieris japonica	P J
Other	O G 4

_____ _____
crop name code

COST OF LINER:
(example: .085) ____.____ ____

CONTAINER GALLON SIZE:
(circle) 1 2 3

CONTAINER MATERIAL
(circle) metal plastic

CONTAINER LABOR
(circle) manual mechanized

CONTAINER MIX
(circle) commercial composted

LABOR AND MATERIAL COST OF CANNING ____.____ ____

OVERWINTERING METHOD:
(circle) single poly double poly double poly and heat

MONTHS THE PLANT WAS GROWN DURING THE YEAR

1st year	2nd year	3rd year

SPACE (SQ. IN.) REQUIRED PER CONTAINER

1st year	2nd year	3rd year

OVERWINTERING COSTS PER CONTAINER

1st year	2nd year	3rd year
.	.	.

PERCENT SHRINKAGE (LOSS)
(Example - 8) _____

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Euonymus alatus	E A
Ligustrum vulgare	L V
Viburnum (species)	V
Weigela hybrida	W H
Other	O G 1
GROUP II	
Buxus microphylla koreana	B K
Euonymus fortunei	E F
Mahonia aquifolium	M A
Pyracantha coccinea	P C
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Euonymus alatus	E A
Ligustrum vulgare	L V
Viburnum (species)	V
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OVERWINTERING COSTS PER CONTAINER

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PERCENT SHRINKAGE (LOSS)
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OVERWINTERING COSTS PER CONTAINER

1st year	2nd year	3rd year
. _____	. _____	. _____

PERCENT SHRINKAGE (LOSS)
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